Application No. 09/889,862
Filed: July 23, 2001
TC Art Unit: 1733
Confirmation No.: 1507

REMARKS

Claim 1 has been amended to incorporate the subject matter of dependent claim 20. Claim 21 has been amended to delete subject matter that is now redundant. Claim 22 has been amended to be in independent form, incorporating the subject matter of former claim 1. The subject matter of new dependent claims 56-68 corresponds to the subject matter of dependent claims 9, 10, 13, 16-19, and 24-29.

Claims 1-9, 11-13, 19, 20, 41-44, and 55 have been rejected under 35 U.S.C. § 103(a) over Olry et al. '217 in view of Olry et al. '348. Claim 1 as amended incorporates the subject matter of dependent claim 20 and is believed to be patentable over this combination of references. There is no teaching or suggestion in Olry '217 or Olry '348 that the fiber plies are used whole, free from any cutouts or slots.

The Examiner asserts regarding claim 20 that Olry '217 "did not cut slots in the fabric . . . ." (Office Action, ¶ 3) This assertion is not supported expressly or inherently by Olry '217, and thus cannot serve as a basis for rejection of this claim. Regarding the Examiner's comments in Paragraph 10 of the Office Action (Response to Arguments), the Examiner asserts that "the



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reference did not express a cutting step and had one been deemed necessary, it is believed that such would have been identified by the reference." The Examiner's subjective belief as to what a reference might have taught or should have taught cannot properly be used to reject the claims. In any event, Olry '217 conversely also does not expressly disclose the use of continuous plies. That is, Olry '217 is silent as to the use of continuous plies, or the use of cutouts or slots in the plies. Thus, speaking hypothetically, to counter Applicant's claims, one can only argue that the use of continuous plies or plies without cutouts or slots, as claimed, was inherent in Olry '217. However, the use of cutouts and slots in plies was an art-recognized solution to the problem of ply wrinkles/folding, as noted by Applicant in the present specification. Thus, the use of continuous plies without cutouts or slots could not be deemed to be inherently or necessarily present in Olry '217, given Olry's silence on this matter and the art-recognized different solution.

The Examiner also asserts that Olry '217 "suggested that one skilled in the art would have utilized a deformable fabric which is the exact solution that applicant selected to avoid the cutouts." The mere use of a "deformable fabric" would have been susceptible to the very problems with ply folding that are



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mentioned in the application. Thus, this argument, without more, does not advance the Examiner's position. It is the use of the present invention as claimed that addresses the problems of the prior art.

The combination of Olry '217 and Olry '348 has no additional relevance in teaching or suggesting the subject matter of present claim 1. This combination of references is still silent as to the use of continuous plies, free from cutouts or slots, as claimed. Accordingly, claim 1 and the claims dependent therefrom are believed to be patentable thereover.

Regarding claim 9, the Examiner asserts that Olry '217 "failed to express that a sizing pretreatment was associated with the bare carbon fibers. As such the carbon fibers are believed to be free of surface functions." The Examiner further concludes that carbon fibers free of surface functions are accordingly conventional in the art. The Examiner then further rejects claim 9 based on the additional reference Shepherd et al., asserting that Olry '217 and Olry '348 "failed to address whether one skilled in the art . . . would have provided the carbon fibers which were free of sizing (surface functions) thereon." The Examiner appears to be taking inconsistent positions by asserting that the same



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combination of references does and does not render claim 9 obvious.

Furthermore, the Examiner asserts that the carbon fibers of Olry '217 are "believed" to be free of surface functions in view of Olry's silence as to whether a sizing pretreatment was associated with the bare carbon fibers. However, Olry '217 equally fails to teach the use of carbon fiber yarns that are free of surface functions. Olry '217 is simply silent, one way or the other, as to the subject matter of claim 9, and cannot form the basis for an obviousness rejection with regard to surface treatment-free yarns. Also, even if the surface function-free yarns were conventional in the art, mere knowledge of their existence alone would not properly motivate the use thereof in the presently claimed invention. Accordingly, claim 9 is believed to be patentably distinguishable over the prior art of record.

Claims 1-13, 16-20, 25, 26, 41-44, 48-50, and 55 have been rejected under § 103(a) over Walsh in view of Olry et al. '217 and further in view of Olry et al. '348. As noted above, claim 1 recites using whole plies, free from cutouts or slots, so as to eventually form a one-piece bowl preform. Walsh teaches a crucible holder including a holder top 3 and a holder bottom 13, as shown in Fig. 2. No other configuration for a crucible holder is



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disclosed in Walsh. The Examiner asserts that it would have been obvious to make a one-piece structure by modifying Walsh in accordance with Olry '217. Doing so, however, would impermissibly require a change in the basic principle under which the Walsh construction was designed to operate. MPEP § 2143.01.

Furthermore, the Examiner's proposed motivation for making such a modification is conclusory and unsupported by the references. Nothing in the prior art of record supports the assertion that one of ordinary skill would have used the teaching of Olry '217 to simplify manufacture, especially because Walsh's only disclosed objective was to make components for a two-piece crucible holder. The prior art of record offers no motivation to pick the teachings of Olry '217 over those of Walsh, as the Examiner asserts. Olry '348 adds no teaching or suggestion that remedies the deficiencies noted above.

Accordingly, claim 1 and the claims dependent therefrom are believed to be patentable over Walsh, Olry '217, and Olry '348.

Claim 9 has also been rejected under § 103(a) over Olry et al. '217 in view of Olry et al. '348 and further in view of Shepherd et al. This rejection was discussed above, and this claim is believed to be patentable for the reasons set forth above with respect to claims 1 and 9.



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Claim 10 has been rejected under § 103(a) over Olry et al. '217 in view of Olry et al. '348 and further in view of Thebault. This claim is believed to be patentable for the reasons set forth above with respect to claim 1, and accordingly no further comment thereon is believed necessary at this time.

Claims 14 and 15 have been rejected under § 103(a) over Olry et al. '217 in view of Olry et al. '348 or over Walsh in view of Olry et al. '217 and further in view of Olry et al. '348 and further taken with Monget et al. and Cahuzac. These claims are believed to be patentable for the reasons set forth above with respect to claim 1, and no further comment thereon is accordingly believed necessary at this time.

Claims 21-24, 28, 29, 45, 51, and 52 have been rejected under § 103(a) over Walsh in view of Olry et al. '217 and further in view of Olry et al. '348 and further taken with E.P. 913,504 and Soviet Union Patent 1699755. These claims are believed to be patentable for the reasons set forth above with respect to claim 1.

In addition, claim 21 recites that a hole is formed in the bottom of the preform defined by the draping of continuous fiber plies as recited in claim 1. EP '504, in which filament winds are wound about shafts 114R, 114L so as to inherently create a hole



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107, would not have motivated all of the aspects of the present invention recited in claims 21 and 22.

Furthermore, the combination of references offers no motivation that would have necessarily led one of ordinary skill to form the hole prior to densification using CVI (as in claim 21) or to plug the hole after densification (as in both claims 21 and 22). Note that EP '504 is silent as to densification in describing the embodiment of Figs. 6-8 (pertaining to the embodiment in which hole 107 is formed).

Also, now independent claim 22 recites the use of fiber plies that are whole except for having a substantially central opening, and superposing the plies upon one another with their respective central openings aligned, so as to form a hole through the bottom of the preform. EP '504 does not disclose or suggest this feature. Further, as with claim 1, the cited references do not teach or suggest that the hole is plugged after CVI is performed. Claim 22 and the claims dependent therefrom are accordingly believed to be patentable over the prior art of record.

Also, the prior art of record does not disclose or suggest a plug made from a thermostructural composite material, as recited in claims 23 and 45. The attempt to bridge this gap by asserting that the use of a C-C reinforced composite material (i.e., a

thermostructural composite) "would have been within the purview of the ordinary artisan" is again a conclusion unsupported by the prior art of record. The mere fact that one could use something in the manner presently claimed is not alone sufficient absent a motivation to so use. Evidence of such a motivation is respectfully requested. See MPEP § 2144.03.

Similarly, the asserted prior art combination also fails to teach or suggest an additional step of CVI after the hole is plugged, as in claim 24.

Claim 27 has been rejected under § 103(a) over Walsh in view of Olry et al. '217 and further in view of Olry et al. '348 further taken with E.P. 913,504 further taken with any one of Metter et al., Kondo et al., or Holcombe et al. This claim is believed to be patentable for the reasons set forth above with respect to claim 1, and accordingly no further comment thereon is believed necessary at this time.

In view of the above amendments and remarks, all claims are believed to be in condition for allowance, and reconsideration and indication thereof are respectfully requested.



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The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite prosecution of the present application.

Respectfully submitted,

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